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gidæ. On looking over the venation of the Tineidæ represented on Spuler's Plate XXVI, it is evident that the very narrow-winged genera, such as Coleophora, Ornix, Lithocolletis, Nepticula, Gelechia, Cemiostoma and Œcophora, are highly modified recent forms, when compared with Tinea and Blabophanes as well as the Adelidæ (Adela, Nemotois, Choreutidæ, Simaethis and Choreutis) and justify Chapman in associating them with the Pyraloids in his group of *Pupæ obtectæ.*

Family *Prodoxidæ.*—This group is represented by Tegeticula (Pronuba) and Prodoxus. The eye-collar (maxillary palpi, Fig. 6, *mx p*) is larger than in any of the other Tineina, and the group is thus intermediate between the Neo- and Paleolepidoptera. The pupa, as well as other stages, have been well-described by Riley, who, however, has overlooked the eye-collar, though he figures and describes the remarkable "maxillary tentacles." I am disposed to regard the latter organ as the maxilla itself, and to consider that the "maxilla" of Riley is the lacinia or inner lobe of the maxilla, but have had no material for examination. Should this prove to be the case, it would carry the family down among the *Lepidoptera laciniata.*

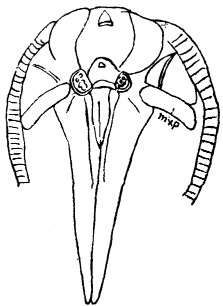

FIG. 6.

(*To be continued.*)

RECENT LITERATURE.

Some Recent Text-books and Student Guides.—For several years the crying need of American teachers has been a text-book of zoology which, in contents and manner of treatment, should be of use in American colleges and technical schools. All that our publishers had offered us were books which were far behind the times, and some were far behind any times unless we go back to that long ago when father Adam was posing as a systematist and was giving the animals their names. So the American student has had to depend on European works. Sedgwick's translation of Claus, notwithstanding its outrageously high price and its short comings in treating of the vertebrates has been used extensively. With Dr. McMurrich's Invertebrate Morphology[1] the demand is partially met—partially since the work deals only with the Invertebrates. Now the American teacher can refer his students to a brief and yet modern account of those animals fortunate enough to lack back bones, with the assurance that they will find, clearly expressed, the essential facts of structure and development. In his general treatment Dr. McMurrich follows the time honored precedent, first dealing with protoplasm and the cell, next with the Protozoa and the passing to the Metazoa and their various subdivisions. In these the sponges are retained under the Cœlenterata (spelled Cœlentera) while, rightly we think, the Ctenophores are regarded as a distinct branch. A bit of conservatism retains the Nemertines in the flat worms, and the close association of the Sipunculids and Gephyrea. Like von Kennel, one author disregards the Arthropods, presenting instead three "types" Crustacea, Arachnida, and Tracheata, and (*pace* Lankester) treating the Xiphosures as an appendix to the Crustacea.

In his general treatment the author exhibits a familiarity with recent literature and discusses at some length such morphological questions as the origin of metamerism, the iner-relationship of arthropods, affinities of the Mollusca, etc. The illustrations are largely process cuts and while they have, in most instances, a freshness which is pleasing there is not infrequently an exasperating inaccuracy or vagueness in many of the diagrams and copies. Thus the student puzzling over the oviduct of the barnacle will have no assistance as to its termination from fig. 181, while one looking for the number of cardiac ostia in Limulus will be misled by fig. 196. But the most serious errror which we have noticed relates to Peripatus. In fig. 220, which is copied from Sedgwick, the term cœlom is extended to all the cavities of the body which Sedgwick shows are pseudocœliac, and the peculiar feature that the true cœlom is *restricted* to the gonads, the sac at the inner ends of the nephridia, and the nephridia and genital ducts is no where noticed in the text. The typography and press-work of the volume are good and we are glad to see that the publishers have dropped the fat and dumpy style in which they issued the earlier volumes of the "American Science Series."

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[1] A text-book of Invertebrate Morphology by James Playfair McMurrich. New York. Henry Holt & Co., 1894 80 pp. vii+660.

At last there is a convenient work on the anatomy of the cat;[2] a work which is devoted to the cat and the cat alone; which does not discuss foreordination or total depravity, Grimm's law or the price of stocks; which tells the student plainly how to cut up the useful laboratory animal, tells the names of the various parts, and gets through when it is through. The little work of Messrs. Tower and Cutter is handy in size, clear in directions and intelligible in its figures and diagrams. It is the book we long have sought aud mourned because we found it not.

Comstock's Manual for the Study of Insects.[3]—For several years teachers and students of entomology have been waiting in eager anticipation for the completion of the work upon which Professor and Mrs. Comstock have so long been engaged. Now that it has appeared they have no reason to regret the delay, for the book is by far the best manual available to the student. It contains 700 pages, 800 figures on the text and six full page plates, one of which is colored. Practically all of the illustrations are original with the authors, the great majority of them having been especially engraved for this book by Mrs. Comstock. These figures for the most part are of unusual excellence, and the plates, especially IV, V and VI are of rare artistic value, and in my judgment are the finest examples of insect illustrations in black and white that have appeared in America. Any entomologist would be glad to frame these for his study or laboratory, and it is to be hoped that the publishers will see fit to print these plates on large paper for this purpose.

In the preface the authors state that the book has been prepared especially with reference to the needs of the student who desires to determine "the names and relation affinities of insects, in some such way as plants are classified in the well-known manuals of botany." It has been possible to carry out this idea only with the larger groups, the number of species precluding the possibility of making keys to species. The keys go far enough, however, to be of great value to the teachers and student.

Nineteen orders of insects are recognized, in the following sequence —Thysanura, Ephemerida, Odonata, Plecoptera, Isopoda, Corrodentia,

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[2] A laboratory guide for the dissection of the cat by Frederic P. Gorham and Ralph W. Tower. New York, Chas. Scribners Sons, 1895, pp. ix+87.

[3] A Manual for the Study of Insects by J. H. and A. B. Comstock. Ithaca, N. Y. Comstock Publishing Co., 1895. Price $3.75.